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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/121,152	10/19/1998	STEVEN SAY-KYOUN OW	20565-0111	2999

23579 7590 03/17/2005

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EXAMINER	
ALVO, MARC S	
ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/121,152

Applicant(s)

OW ET AL.

Examiner

Steve Alvo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 22, 2004 has been entered.

The following terms were not disclosed in Parent Application 07/518,935:

"Pulping at a pH of less than about 8". The specification of 07/518,935 taught only that the pH of the stock in the pulper is adjusted to "a pH of 3.0 to 8.0" it did not disclose pulping at a pH of less than 8. The term "less than 8" includes pH's less than the originally disclosed lower limit of 3.0. Also the term "less than about 3 to less than 8" was not originally disclosed. This would read on values just outside the claimed range, e.g. the term about would include a pH of 2.7 to less than 8.8". The original disclosure of only supports a range of "3.0 to 8.0". Clearly about 3 to 8" is broader than the originally range with an upper and lower range to two significant figures, e.g. the term "3" is broader than the term "3.0" as 3 includes values of "2.5 to 3.4" while "3.0" does not. The specification did not specify what the pH of the stock was during pulping. Only that it was adjusted to a pH of 3.0 to 8.0. The original disclosure did not state that the pH was maintained during the pulping. The following terms were not disclosed "time period of less than about 1 hour", a temperature of "20 °C" (this temperature was added to the specification by an amendment on May 13, 1991, it was not part of the original disclosure), "*Trichoderma viride*, *Aspergillus niger* or mixtures thereof" "pH 3 to about 7" were not disclosed. Claim 41, the term "pulping at an acid or neutral pH was not originally disclosed in 07/518,935. This term would include all pH's that are acid (pH of 1.0 to less than 7.0" and

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neutral (pH of 7.0). These terms include pH's outside the originally disclosed range of 3.0 to 8.0" Accordingly, the claims of the instant case have an effective filing date of the CIP Application 08/239,313, filed May 6, 1994.

The obvious-type double patenting rejection has been dropped with the filing of a terminal disclaimer

It is noted that the term "about 3 to less than 8" was interpreted by the Examiner, in the last Office Action, to mean a lower point in the range of "about 3" and an upper point of "less than 8" and not "about less than 8.0". It was pointed out by the Examiner that the term "about less than 8.0" would not exclude the 8.0 of Japan '299. Applicant has amended claim 1, step a) to "less than about 8". Thus it appears that Applicant is interpreting the term "about 3 to less than 8" to mean "about 3 to about less than 8". Thus the claims no longer define over Japanese Patent '299, since the Japanese Patent discloses deinking at a pH of 8.0.

The Declaration of Mr. Kaplan filed November 22, 2004 has been considered, but is not convincing. A 132 Declaration cannot overcome a 35 USC 102 rejection. Besides, the Declaration is not clear under what conditions the OW sample was performed. It is not clear if all other variables, such as temperature, were kept the same for the "Novozym 342" and "HEP-100". The claims must be commensurate in scope with the evidence submitted. The claims are not limited to "Novozym 342". In paragraph 8, Mr. Kaplan states that

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-25, 27-34 and 36-47 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese Patent Document '299.

Japanese Patent '299 teaches dislodging ink from waste paper during pulping (disintegration) using an enzyme at a pH of 8.0, see page 2 of the translation, last line. As set forth above the instant claims do not define over the pH of 8.0 of Japanese Patent '299. See, page 3, lines 4-5, for temperatures of 40-90 °C for 0.5-360 minutes. See Example 2 for old newspaper. If necessary, it would have been obvious to use a pH lower than 8.0 as the Japanese Patent teaches on page 4 of the translation, that "The practice of the invention, the solvent, acid, alkali etc. can be added provided it does not impair the invention" and paragraph bridging pages 2 and 3 that "Cellulase commonly occurring in plants, animals, bacteria and fungi can be used in this invention without any special restriction, but alkaline cellulase is especially preferred. Alkaline cellulase is one having optimum pH 8.0-11.5 (preferably 8.1-11.0). Such enzyme retains its activity in the alkaline range as well as the acid and neutral range". Since Japanese Patent teaches that the alkaline cellulase is active in the acid and neutral range it would have been obvious to use the cellulase in its entire range of activity, e.g. at acid and neutral pH's, but the Japanese Patent is not limited to alkaline cellulases and indicates any cellulase could be used

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(page 2 of the translation, last three lines). Obvious this would include neutral and acid cellulases, which have their optimum activity in the neutral and acid range. It would have been obvious to use the other cellulases of the Japanese Patent in their optimum acid and neutral ranges. If not taught by the Japanese Patent, then it would have been obvious to remove all types of ink from the old newspapers of Japanese Patent Document '299

Claims 21-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document '299 with or without CAYLE et al or WOOD et al (4,618,400).

Japan '299 teaches the use of cellulase as a deinking agent and teaches using a pH of 8.0. The bottom of page 2 states "cellulase ... can be used ... without any special restriction, although alkaline cellulase is especially preferred. (Emphasis added) Clearly this reference encompasses use of non alkaline cellulase, and page 4, lines 6-8 state acid or alkali can be added, and that the invention is not restricted to the examples. The first claim teaches cellulase alone as a deinking agent. Although page 3 says you may get better effect using a surfactant, etc, lines 14 and 15 clearly teaches cellulase decomposes the slurry and provides an excellent deinking effect. If necessary, CAYLE et al is cited to teach cellulase enzymes from *Trichoderma viride* (acid enzymes) are known to aid in disintegration of waste paper including newsprint. Thus to have used such a cellulase in a medium having no added alkali would have been prima facie obvious to one of ordinary level of skill in the art, in fact Japan '299 says any cellulase without restriction may be used for deinking. If necessary CAYLE teaches 75-80% water, e.g. consistency of 20-25%, see claim 1 of CAYLE et al. Or WOOD et al teaches that deinking with alkaline compounds can use a PH greater than "about 7" (column 4, lines 9-19). It would have been

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obvious to one of ordinary skill in the art that the alkaline deinking of the Japanese Patent could use a pH of about 7 as such is taught by WOOD et al.

Claims 21-25, 27-34 and 36-47 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese Kokai 63-59494 or WO 91/14819.

The specific end points of a “a pH between about 3 to about less than 8”; “pH between about 3 to less than 8” and “pH of about 3 to about 7” were not disclosed in the Parent Application (07/518,935). Claims 21-47 have an effective filing date of 5/6/1994 of the Parent Application 08/239,313. Japanese Kokai 63-59494 or WO 91/14819 teach deinking waste paper using cellulase having a pH within the claimed range, see Japanese Kokai 63-59494, translation, page 3, or WO 91/14819, page 3, lines 13-15.

Claims 26 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2,231,595 or WO 91/14819 in view of Japanese Kokai 63-59494.

The use of *Trichoderma viride* or *Aspergillus niger* were not disclosed in the parent Application 07/518,935. These enzymes were first disclosed in CIP Application 08/239,313, filed 5/6/1994, now Patent No. 5,785,809. Claims 26 and 35 have an effective filing date of 5/6/1994.

The GB Patent is the equivalent of the parent Application (07/518,935) and teaches everything except using *Trichoderma viride* or *Aspergillus niger* as the enzyme. WO 91/14819 teaches deinking wastepaper at a pH of 6 to 9.5 (page 3, lines 13-15). Japanese Kokai 63-59494 teaches cellulase enzymes from *Trichoderma viride* are known work best at an acid pH. It would have been obvious to use the enzyme of Japanese Kokai 63-59494 as the acid cellulase of the GB Patent or WO 91 14819.

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The argument that G.B. '595 is the equivalent of the Korean Priority Document of the instant case is not convincing. Applicant is not entitled to the priority date of the Korean Patent to any subject matter first disclosed in CIP Application 08/239,313 (filed 5-6-1994). Claims 26, 27, 35 and 37 are only entitled to the filing date of the CIP, e.g. the time the enzymes *Trichoderma viride* or *Aspergillus niger* and the end point of a pH of 7.0 were first disclosed. The GB Patent has a Patent date of 3-24-1993, which is more than a year prior to 5-6-1994. It is noted that it was also published as an Application on 11-21-1990.

The Declarations of Dr Eveleigh and Dr. Eriksson have been considered, but do not overcome the prima facie case of obviousness. These Declarations do not present any comparison to the closest prior art. It is the opinions of Dr Eveleigh and Dr. Eriksson, that when JAPAN '299 refers to "as well as the acid or neutral range" it is the conditions under which the enzyme may be purified. However, JAPAN '299 states, "Such enzyme retains its activity in the alkaline range as well as acid or neutral range...". The retaining of the **activity** of an enzyme is a property of the enzyme itself, e.g. retained after formation and purification; it is not the conditions used to purify the enzyme.

The argument that the PPI article (Exhibit B) that the first neutral deinking system began in July 1992 is not convincing for the following reasons:

(1) The claims are not limited to neutral deinking and include acid deinking (pH 3.0 to less than 7.0) and alkaline deinking (pH greater than 7.0 to less than 8.0).

(2) The article states that "the first neutral deinking system began its operation in July of 1992". However, it does not indicate that the technology was not known earlier.

(3) The article states that “the first neutral deinking system began its operation in July of 1992”. This is more than a year earlier than the effective dates of claims 26, 27, 35 and 37.

(4) The use of a cellulase having activity in the neutral and acid range would have been obvious from the teachings of JAPAN '299 and/or CAYLE et al.

Applicant pointed out that a prima facie case of obviousness could be rebutted by objective indicia of the lack of such obviousness. However, such would require a comparison to the closest prior art, e.g. the pH of 8.0 disclosed by JAPAN '299. The claims would also have to be commensurate with the evidence presented. Such a comparison has not been made between the instant process and that of JAPAN '299.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Alvo whose telephone number is 571-272-1185. The examiner can normally be reached on 6:00 AM to 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steve Alvo

STEVE ALVO
PRIMARY EXAMINER